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Scientific Facts, Misinformation, and Disinformation: On Media Violence

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Abstract. This article critiques a recent publication in the American Psychological Association's (APA) flagship journal, American Psychologist. This publication asserts that media reporting on scientific research concerning the effects of media violence on human psychology underreports those effects and misinforms the public.

Bushman and Anderson (2001) assert that news reports underreport the significance of the linkage between mass media violence and human aggression. Their criterion for this assertion is "scientific knowledge" (p. 477) largely based on psychological research. The authors then go on to attribute media underreporting to "vested interests of the news, a misapplied fairness doctrine in news reporting, and the failure of the research community to effectively argue the scientific case" (p. 477). A fatal problem with these causal attributions is that the hypothesis of media underreporting is not supported by the authors' own data.

Bushman and Anderson state that, "Over the past 50 years, the average news report has changed from claims of a weak link to a moderate link and then back to a weak link between media violence and aggression. However, since 1975, the scientific confidence and statistical magnitude of this link have been clearly positive and have consistently increased overtime" (p. 477). To show that this conclusion merits the attribution of media underreporting, the authors must show that "weak and moderate" and "clearly positive" denote significantly different phenomena. Secondarily, they must show that the discontinuity of weak-to-moderate-to-weak versus clearly positive and increasing over time is a significant one.

As to the first and primary Issue, Bushman and Anderson's Figure 2 (p. 481) depicts an average correlation coefficient between media violence and human aggression based on psychological research as a little over 0.3. This means that--according to traditional analyses of correlation coefficients and variance--a little over 9% of the variance of aggression (where 100% would be the highest possible value) is explained by media violence. Here, "explained by" denotes some concatenation of "being associated" with foreshadowing some "possibility of actual cause." Nine versus 100? Would not a discerning newspaper reader conclude that the media is being accurate in using the term "weak" and is mighty charitable in using the term "moderate?"

Is there an effective rebuttal to this hypothesized, discerning newspaper reader? In Figure 2, Bushman and Anderson's placement of the average correlation coefficient for media violence-human aggression within the context of correlation coefficients from other research domains--e.g., smoking and lung cancer (almost 0.4), condom use and sexually transmitted HIV (a little over 0.2), and homework and academic achievement (about 0.1)--is explicitly intended to support the conclusion that "a little over .3" is, indeed, more than "weak" or "moderate." After all, this value is the second largest in Figure 2. However, this attempt at persuasion says more about what passes for large correlation coefficients and measures of association among social, behavioral, and other psychological variables and constructs within the world of scientific psychology.

Bushman and Anderson further hurt their case when they state that, "Most people would agree that the other correlations displayed in Figure 2 are so strong that they are obvious" (p. 480). To state that all these coefficients from about -0.06 to almost 0.4 are "so strong" would certainly be good news to researchers who fear perishing through not publishing 0.0 coefficients between variables. On the other hand, if one assumes that the authors "really mean" that the hypotheses concerning the relationships between pairs of variables in Figure 2 are perceived as obvious to most people, then we have succumbed to a lay psychology that is reified to the exclusion of empirical research.

And what of the discontinuity over time between media and scientific reporting on the relationship between media violence and human aggression? It turns out that there is less than meets the eye. Figure 4 (p. 484) depicts a positive relationship between the two variables that increases from 1975 to 2000 based on scientific reporting. However, the increase from a little over 0.13 to a little under 0.15 from 1975 to 1995 is probably of little social utility regardless of whether the size of N for the studies allows an attribution of statistical significance. The larger increase from a little under 0.15 to about 0.20 from 1995 to 2000 also is probably of little social utility. (The authors choose not to focus on the decrease from a little under 0.14 to a little more under 0.14 from 1980 to 1985).

Moreover, Figure 5 (p. 485) shows that the increase through time in the scientific reporting of average correlation coefficients between media violence and aggression is from non-experimental studies only! Experimental studies depict a rise and fall in the value of coefficients that are isomorphic with the rise and fall of the relationship between the two variables as reported by the media--even if asynchronous with this reporting. Finally, the 1975-2000 reduction in the relationship between the two variables as reported by the media is described as going from about 5 to 4 on a 10-point scale--the 4 value being well within the 95% confidence interval of the 5 value. This does not represent a rousing and robust trend.

In conclusion, one can make a strong case that the real story to be reported by representatives of science and the media is that the former is over reporting the relationship between media violence and aggression. Some observers might allege that this misinformation may actually be disinformation given the APA's political stance against violence in the media during various public policy deliberations. On the other hand, the media may be getting it just right. (See Bushman, B.J., & Anderson, C.A. (2001). Media violence and the American public. American Psychologist, 56, 477-489; Centerwall, B.S. (1989). Exposure to television as a risk factor for violence. American Journal of Epidemiology, 129, 643-652; Hogben, M. (1998). Factors moderating the effect of television aggression on viewer behavior. Communication Research, 25, 220-247; Paik, H., & Comstock, G. (1994). The effects of television violence on antisocial behavior. Communication Research, 21, 516-546; Rosenthal, R. (1990). How are we doing in soft psychology? American Psychologist, 45, 775-777; Wood, W., Wong, F.Y., & Chachere, J.G. (1991). Effects of media violence on viewers' aggression in unconstrained social interaction. Psychological Bulletin, 109, 371-383.) (Keywords: Aggression, Media Violence.)